REMARKS

In response to the Office Action dated April 20, 2011 (hereinafter "the Office Action"), the Assignee respectfully requests reconsideration. Claims 1-15 and 17-27 were previously pending in this application. By this amendment, no claims are amended, cancelled, nor added. As a result, claims 1-15 and 17-27 are pending for examination with claims 1, 6, 11, 16, 17, 21, and 24 being independent.

Rejections under 35 U.S.C. § 103: Claims 1-15

Claims 1-16 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. 5,953,701 (hereinafter "Neti") in view of "The 1998 BBN BYBLOS Primary System applied to English and Spanish Broadcast News Transcription," Spyros et al., 1999, DARPA Broadcast News Workshop (hereinafter "Spyros") and further in view of U.S. 6,529,902 (hereinafter "Kanevsky"). As noted in a previous response, claim 16 was cancelled and is no longer pending for examination. The Assignee respectfully traverses the rejections of claims 1-15, of which claims 1, 6, and 11 are independent.

I. Claim 1

Claim 1 is directed to at least one computer readable medium encoded with instructions that, when executed by at least one processor, perform a method for generating a speech recognition model. Claim 1 recites:

> receiving female speech training data;
> generating female phoneme models based on the female speech training data;
> receiving a male speech training data;
> generating male phoneme models based on the male speech training data;
> determining a difference between each female phoneme model and each corresponding male phoneme model;
> creating a gender-independent phoneme model when the difference between the compared female phoneme model and the corresponding male phoneme model is less than a predetermined value; and
> adding, based on at least one criteria, one of the gender-independent phoneme model, or both the female phoneme model and the corresponding male phoneme model to the speech recognition model.

Neti, Spyros, and Kanevsky, considered alone or in combination, fail to disclose every limitation as set forth in claim 1 for reasons explained below.

  A. *None of the references disclose "creating a gender-independent phoneme model when the difference between the compared female phoneme model and the corresponding male phoneme model is less than a predetermined value."*

The Office Action acknowledges that Neti fails to disclose "creating a gender-independent phoneme model when the difference between the compared female phoneme model and the corresponding male phoneme model is less than a predetermined value," and asserts (p. 4) that Spyros teaches "a phoneme based gender independent model creation." The Office Action includes excerpts from Spyros (sections 2 and 3.4) in setting forth the rejection, but provides absolutely no clearly articulated reasoning or explanation as to how the various aspects of Spyros' system described in the excerpted sections are believed to disclose the above-cited limitation as set forth in claim 1. Though the sections of Spyros cited in the Office Action briefly describe classifying audio segments by gender, estimating gender-dependent band-specific models from training, detecting channel changes, detecting gender changes, using a gender-independent model to detect channel changes, and training a gender-independent, context-independent model using labeled training data, none of the cited sections or any other section of Spyros discloses "creating a gender-independent phoneme model when the difference between the compared female phoneme model and the corresponding male phoneme model is less than a predetermined value" as set forth in Assignee's claim 1. There is nothing in Spyros that describes taking any action "when the difference between the compared female phoneme model and the corresponding male phoneme model is less than a predetermined value." Kanevsky also fails to disclose this limitation. Kanevsky is directed to off-line detection of textual topical changes, and does not even describe "creating a gender-independent phoneme model."

Since none of Neti, Spyros, and Kanevsky disclose "creating a gender-independent phoneme model when the difference between the compared female phoneme model and the corresponding male phoneme model is less than a predetermined value" the rejection of claim 1 should be withdrawn.

Additionally, since the Office Action only provides excerpts from Spyros without any clearly articulated reasoning as to how any one of the cited aspects of Spyros relates to the above-cited limitation of Assignee's claim 1, nor as to how claim 1 would have been obvious in view of the cited aspects of Spyros, the rejection of claim 1 with regard to Spyros is based on conclusory statements and therefore should be withdrawn for this additional reason. "'[R]ejections on obviousness cannot be sustained by mere conclusory statements.'" KSR, 550, 82 USPQ2d at 1396 citing In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) Additionally, "The key to supporting any rejection under 35 U.S.C. 103 is the **clear articulation** of the reason(s) why the claimed invention would have been obvious." (MPEP 2141 III, emphasis added)

B. Summary regarding claim 1.

As explained above, Neti, Spyros, and Kanevsky, considered alone or in combination fail to disclose at least "creating a gender-independent phoneme model when the difference between the compared female phoneme model and the corresponding male phoneme model is less than a predetermined value" as set forth in claim 1. Additionally, the Office Action provides no clearly articulated reasoning in connection with Spyros to adequately support a rejection of claim 1 under 35 U.S.C. § 103(a). For at least these reasons, claim 1 patentably distinguishes over Neti, Spyros, and Kanevsky. Accordingly, reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 2-5 depend from claim 1 and are therefore patentable for at least the same reasons.

II. Claim 6

Claim 6 is directed to a system for generating speech recognition models and recites, *inter alia*, "determine a difference between each first phoneme model and each corresponding second phoneme model; create an independent phoneme model when the difference between the compared each first phoneme model and each corresponding second phoneme model is less than a predetermined value; and add, based upon a criterion, one of the independent phoneme model, or both the first phoneme model and the corresponding second phoneme model to the speech recognition model."

For reasons that should be clear from the discussion of claim 1 above in connection with Neti, Spyros, and Kanevsky, these cited references fail to teach or suggest every limitation as set forth in claim 6. Therefore, claim 6 patentably distinguishes over Neti, Spyros, and Kanevsky. Accordingly, withdrawal of the rejection of claim 6 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 7-10 depend from claim 6 and are therefore allowable for at least the same reasons.

III. Claim 11

Claim 11 encompasses a computer program product and recites, *inter alia*, "determine a difference between each first phoneme model and each second phoneme model; create an independent phoneme model when the difference between the each first phoneme model and the each corresponding second phoneme model is less than a predetermined value; and add, based on a criterion, one of the independent phoneme model, or both the first phoneme model and the corresponding second phoneme model to the speech recognition model."

For reasons that should be clear from the discussion of claim 1 above in connection with Neti, Spyros, and Kanevsky, these cited references fail to teach or suggest every limitation as set forth in claim 11. Therefore, claim 11 patentably distinguishes over Neti, Spyros, and Kanevsky. Accordingly, withdrawal of the rejection of claim 11 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 12-15 depend from claim 11 and are therefore allowable for at least the same reasons.

Rejections under 35 U.S.C. § 103: Claims 17-27

Claims 17-27 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. 5,953,701 (hereinafter "Neti et al.") in view of U.S. 5,440,662 (hereinafter "Sukkar"). Assignee respectfully traverses the rejections of claims 17-27 for reasons explained below.

IV. Claim 17

Claim 17 is directed to a computer readable medium product encoded with instructions and recites, *inter alia*:

>   receiving a current feature vector of the audio stream;

computing best estimates that the current feature vector belongs to each one of the plurality of data classes;

computing accumulated confidence values for each of the plurality of data classes that the current feature vector belongs to each one of the plurality of data classes, the confidence value for each data class of the plurality of data classes based on the current best estimate for the data class and on previous confidence values for the data class, the previous confidence values associated with previous feature vectors of the audio stream;

weighing the class-dependent phoneme models based on the accumulated confidence values; and

recognizing the current feature vector based on the weighted class-dependent phoneme models.

Neti and Sukkar, considered alone or in combination, fail to disclose every limitation as set forth in claim 17.

A. *Sukkar fails to disclose limitations for which Sukkar is relied upon.*

The Office Action (p. 15) acknowledges that Neti fails to disclose:

computing accumulated confidence values for each of the plurality of data classes that the current feature vector belongs to each one of the plurality of data classes, the confidence value for each data class of the plurality of data classes based on the current best estimate for the data class and on previous confidence values for the data class, the previous confidence values associated with previous feature vectors of the audio stream;

weighing the class-dependent phoneme models based on the accumulated confidence values; and

recognizing the current feature vector based on the weighted class-dependent phoneme models.

The Office Action then excerpts several passages from Sukkar (Abstract, col. 5, ll. 14-27) in setting forth the rejection of claim 17 without providing any explanation as to how the cited aspects of Sukkar specifically relate to the limitations of claim 17. The cited sections of Sukkar describe a two-pass classifier that "uses the information supplied by the HMM keyword classifier in a two-stage discriminant analysis" that operates on confidence scores post-HMM processing, and wherein "the output of the second stage is a classification parameter that can be compared to a threshold to make the final keyword/non-keyword decision." (Sukkar, col. 4, ll. 45-66) However, Sukkar nowhere describes "computing accumulated confidence values for each of the plurality of data classes that **the current feature vector belongs to each one of the plurality of data classes**, the confidence value for each data class of the plurality of data classes based on the current best

estimate for the data class **and on previous confidence values for the data class, the previous confidence values associated with previous feature vectors of the audio stream,**" and "**weighing the class-dependent phoneme models** based on the accumulated confidence values," and "recognizing the current feature vector based on the **weighted class-dependent phoneme models,**" as set forth in claim 17. (emphases added) The Office Action makes no attempt to point out with any clarity where each of these limitations can be found in Sukkar.

Since the limitations missing from Neti, for which Sukkar was relied upon in the Office Action, are not disclosed by Sukkar, claim 17 patentably distinguishes over Neti and Sukkar.

Additionally, like the rejection of claim 1, the Office Action provides no clearly articulated reasoning as to how the cited aspects of Sukkar are believed to disclose any of the above-cited limitations as set forth in Assignee's claim 17, nor as to why the invention would have been obvious in view of the cited sections of Sukkar. Again, the rejection of claim 17 under 35 U.S.C. § 103(a) is based on conclusory statements with regard to Sukkar and therefore should be withdrawn for this additional reason.

    B. Summary regarding claim 17.

As explained above, Neti and Sukkar, considered alone or in combination fail to disclose at least "computing accumulated confidence values for each of the plurality of data classes that the current feature vector belongs to each one of the plurality of data classes, the confidence value for each data class of the plurality of data classes based on the current best estimate for the data class and on previous confidence values for the data class, the previous confidence values associated with previous feature vectors of the audio stream," "weighing the class-dependent phoneme models based on the accumulated confidence values," and "recognizing the current feature vector based on the weighted class-dependent phoneme models" as set forth in claim 17. Additionally, the Office Action provides no clearly articulated reasoning in connection with Sukkar to adequately support a rejection of claim 17 under 35 U.S.C. § 103(a). For at least these reasons, claim 17 patentably distinguishes over Neti and Sukkar. Accordingly, reconsideration and withdrawal of the rejection of claim 17 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 18-20 depend from claim 17 and are therefore patentable for at least the same reasons.

V. Claim 21

Claim 21 encompasses a system for recognizing speech data and recites, inter alia, "a first computing module configured to compute current best estimates that the current feature vector belongs to each one of the plurality of data classes; a second computing module configured to compute accumulated confidence values for each of the plurality of data classes that the current feature vector belongs to each one of the plurality of data classes, the confidence value for each data class of the plurality of data classes based on the current best estimate for the data class and on previous confidence values for the data class, the previous confidence values associated with previous feature vectors of the audio stream; a weighing module configured to weigh the class-dependent phoneme models based on the accumulated confidence values; and a recognizing module configured to recognize the current feature vector based on the weighted class-dependent phoneme models."

For reasons that should be clear from the discussion of claim 17 above in connection with Neti and Sukkar, these cited references also fail to teach or suggest every limitation of claim 21. Therefore, claim 21 patentably distinguishes over Neti and Sukkar. Withdrawal of the rejection of claim 21 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 22-23 depend from claim 21 and are therefore allowable for at least the same reasons.

VI. Claim 24

Claim 24 encompasses a computer program product and recites, *inter alia*, "compute best estimates that the current feature vector belongs to each one of the plurality of data classes; compute accumulated confidence values for each of the plurality of data classes that the current feature vector belongs to each one of the plurality of data classes, the confidence value for each data class of the plurality of data classes based on the current best estimate for the data class and on previous confidence values for the data class, the previous confidence values associated with previous feature vectors of the audio stream; weigh the class-dependent phoneme models based on the accumulated confidence values; and recognize the current feature vector based on the weighted class-dependent phoneme models."

For reasons that should be clear from the discussion of claim 17 above in connection with Neti and Sukkar, these cited references also fail to teach or suggest every limitation of claim 24. Therefore, claim 24 patentably distinguishes over Neti and Sukkar. Withdrawal of the rejection of claim 24 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 25-27 depend from claim 24 and are therefore allowable for at least the same reasons.

General Comments on Dependent Claims

Since each of the dependent claims depends from a base claim that is believed to be in condition for allowance, for the sake of brevity, the Assignee believes that it is unnecessary at this time to argue the further distinguishing features of the dependent claims. However, the Assignee does not necessarily concur with the interpretation of the previously presented dependent claims as set forth in the Office Action, nor does the Assignee concur that the basis for rejection of any of the previously presented dependent claims is proper. Therefore, the Assignee reserves the right to specifically address the further patentability of the dependent claims in the future.
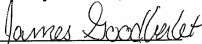
CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Assignee hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. N0484.70762US00.

Dated: 7-20-11   Respectfully submitted,

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